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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/836,514	04/17/2001	Karl K. Rink	AAI-14052	6593

7590 03/30/2004

Mr. James D. Erickson, Manager  
ASP Patent Department  
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EXAMINER
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HARDEE, JOHN R

ART UNIT	PAPER NUMBER
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1751

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/836,514	<b>Applicant(s)</b> RINK ET AL.	
	<b>Examiner</b> John R. Hardee	<b>Art Unit</b> 1751	<i>eh</i>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 25-28,30,31,36-42,44-51 and 53-68 is/are pending in the application.  
4a) Of the above claim(s) 27,28,44-46,48-51,55,56,58-60 and 63-66 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 40, 67, 68, elected invention only, 30, 53 is/are allowed.
- 6) ☒ Claim(s) 25, 26, 31, 36-39, 41, 42, 47, 54, 57 and 62 is/are rejected.
- 7) ☒ Claim(s) 61 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

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1. Claims 27, 28, 44-46, 48-51, 55, 56, 58-60 and 63-66 are withdrawn from consideration by the examiner as being drawn to embodiments non-elected with traverse. The restriction was made final in a previous office action.
2. The remaining claims have been searched and examined only to the extent that they read on potassium t-butyl carbonate, found allowable by the examiner, and ammonium nitrate as the water-supplying species, found obvious by the examiner.
3. No claims can pass to issue until all non-elected subject matter has been deleted from the claims.

***Claim Rejections - 35 USC § 103***

4. Claims 25, 26, 31, 36-39, 41, 42, 47 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/29261. The reference discloses carborane containing airbag inflators and methods for their inflation. According to one inflation method, combustion of a carborane fuel and a primary oxidant form combustion products including heat and a quantity of a first product fuel species (p. 6, lines 26+). A portion of the first combustion products inflate the device. Water is a preferred primary oxidant (p. 12, lines 20+), but the oxidant need not be water. Note p. 24, lines 3+, in which ammonium nitrate is disclosed as a particularly preferred oxidant source material. Note also the inflators in Tables 1 and 2, in which ammonium nitrate is used as an oxidant in addition to water. The combustion products react with pressurized nitrous oxide in the presence of pressurized inert gas in a combustion chamber to form product gases which inflate the airbag. The fuel and oxidant may be stored as a mixture (p. 13,

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lines 6+) or segregated (p. 12, lines 30+). Chamber 16 has a rupture disc 32 covering perforation 30 (see drawing on front). Liner 36 maintains the charge in discharge proximity with initiator device 42. The reference does not disclose a water-free device with sufficient specificity to constitute anticipation.

It would have been obvious at the time the invention was made to construct an airbag inflator which does not utilize water, as the reference teaches that water is a preferred, but not a necessary oxidant, as noted above.

5. Claims 25, 31, 36-39, 41, 42, 57 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nielson et al., US 6,224,099 B1. The reference discloses hybrid airbag inflator systems and igniter compositions for same. The burning of a small amount of propellant propels a piston into a container of *inert* gas which ruptures. The enclosed gas mixes with and is heated by gases generated by the burning of the propellant (col. 5, lines 15-35). Suitable gas generants comprise an oxidizer, such as ammonium nitrate (col. 6, lines 39+). Gas generant compositions may further comprise a binder, such as polypropylene carbonate (col. 7, lines 24+). The chamber must be perforated in order to allow travel of the piston and to allow gas to escape (col. 8, lines 11-13). End piece 4 holds squib 5, and may be considered a liner for the housing (col. 8, lines 15-16). This reference differs from the claimed subject matter in that it does not disclose a method which reads on applicant's claims with sufficient specificity to constitute anticipation.

It would have been obvious at the time the invention was made to use an airbag in the claimed method, because this reference teaches that all of the components

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recited by applicants are suitable for inclusion in a hybrid airbag. The person of ordinary skill in the surfactant art would expect the recited compositions to have properties similar to those compositions which are exemplified, absent a showing to the contrary. Regarding the chemistry recited in the method steps, the examiner takes the position that the same materials will react to give the same products, whether in applicant's airbag or the prior art airbag.

6. Claims 25, 31 and 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al., US 5,486,248. The reference discloses extrudable gas generants for hybrid airbag inflators. The generant comprises about 70-90% of an oxidizer. Ammonium nitrate is disclosed as being a useful oxidizer (col. 5, lines 40+). Coolants may be added at up to 30% of the composition. Suitable coolants include magnesium, lithium, calcium and strontium carbonate salts (col. 5, bottom). This reference differs from the claimed subject matter in that it does not disclose a method which reads on applicant's claims with sufficient specificity to constitute anticipation.

It would have been obvious at the time the invention was made to use an airbag in the claimed method, because this reference teaches that all of the components recited by applicants are suitable for inclusion in a hybrid airbag. The person of ordinary skill in the surfactant art would expect the recited compositions to have properties similar to those compositions which are exemplified, absent a showing to the contrary. Regarding the chemistry recited in the method steps, the examiner takes the position that the same materials will react to give the same products, whether in applicant's airbag or the prior art airbag.

***Allowable Subject Matter***

7. Claims 30 and 53 are allowed.
8. Claim 61 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
9. Claims 40, 67 and 68 are allowable, to the extent that they read on potassium t-butyl carbonate. The references do not provide motivation to segregate the water-supplying and the water-reactive materials.

***Response to Arguments***

10. Applicant's arguments filed November 4, 2003 have been fully considered but they are not persuasive. Applicant argues that claims 59 and 64-66 read on the elected species. This is not persuasive because the search has not been extended to cover metals generally, or alkali metals specifically. Alkali metals are not alkali metal salts. There exist gas generators which comprise metallic alkali metals. such would be water reactive, and these claims were interpreted accordingly. Even if one were to read these claims as reciting the presence of salts of metals, the search has not been expanded to this extent, as non-allowable subject matter has been identified.

Claim 41 should have been more explicitly rejected over the WO reference in the previous office action. As applicant notes, claim 42, which depends from claim 40, was rejected over the WO. In addition, the limitation of claim 41, the perforated housing, was

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clearly pointed out in the body of the rejection. This oversight has been corrected. The examiner apologizes for any confusion which may have resulted.

Applicant's arguments regarding the presence or absence of water were addressed in the previous office action. The teachings of a reference are not restricted to preferred embodiments. Regarding claim 47, reaction with nitrous oxide in the presence of an inert gas is disclosed in the WO.

Regarding propylene carbonate vs. t-butyl carbonates, the problem arises from the breadth of applicant's claims. Applicants have recited carbonates generally, and the examiner has provided an airbag fuel which is a different carbonate from those which applicant had in mind. While applicant may claim broadly, this makes applicant's claims open to rejection from unanticipated quarters. If applicant believes that the airbag mixtures of Nielson are not operative, this should be demonstrated via affidavit. Attorney arguments cannot take the place of evidence.

Applicant's arguments regarding the rejection of claim 26 over Nielson are persuasive, and the rejection has been withdrawn. The housing of Nielson, broadly considered, has a perforation which accommodates a rupture disk.

Regarding the Taylor reference and the recited sequence of events, the materials which combust in the Taylor device are disclosed by applicant as being suitable for applicant's advice. The examiner believes it reasonable to conclude that combustion within one device will trigger the same sequence of events as combustion in the other device. Applicant's arguments regarding the rejection of claim 26 over Taylor are persuasive, and the rejection has been withdrawn.

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Claims 40, 67 and 68 are allowable, to the extent that they read on potassium t-butyl carbonate. As the generic claims are not allowable, search and examination of these claims has not been extended further.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner, Dr. John R. Hardee, whose telephone number is (571) 272-1318. The examiner can normally be reached on Monday through Friday from 8:00 until 4:30. In the event that the examiner is not available, his supervisor, Dr. Yogendra Gupta, may be reached at (571) 272-1316.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "J. Hardee", with a stylized, cursive script.

John R. Hardee  
Primary Examiner  
March 24, 2004